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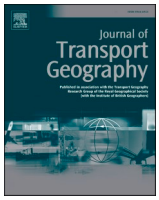

Between dispersion and recentring: Observations on post-pandemic migration flow and housing relocation behaviours in Montréal, Canada

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ABSTRACT

The COVID-19 pandemic has generated debate over whether changes in work and travel behaviour have resulted in a lasting reconfiguration of residential location preferences. This study examines residential relocation behaviour before, during, and after the COVID-19 pandemic using a spatial multinomial logit model applied to mobility survey data from the Montréal metropolitan region. The model achieves strong explanatory power and enables assessment of how housing relocation determents changed across pandemic phases. There is evidence of decentralization in relocation patterns; however, this evidence does not support a structural decline in the importance of spatial land use and transport factors, such as accessibility. Job accessibility by public transport remains positively valued across all periods, but the penalty associated with distance to work weakens after the pandemic. This weakening indicates increased tolerance for residential-workplace separation but not necessarily a rejection of accessibility itself. Neighbourhood quality consistently shapes relocation utility, alongside a strengthening post-pandemic preference for larger dwellings in suburban locations. Car ownership enables relocation beyond the core, while transit reliance anchors households to central areas. For low-income households, pandemic-related decentralization was temporary, with post-pandemic patterns reinforcing long-standing affordability constraints. Together, these findings suggest that pandemic-induced decentralization was a behavioural adaptation within structural determinants of residential choice. The study contributes to understanding how short-term shocks interact with housing markets, accessibility, and mobility resources, and informs housing and transport planning in post-pandemic urban regions.

1. Introduction

With the gradual mitigation of the COVID-19 pandemic and relaxation of restrictions, many travel and social activities have seemingly "bounced back" to their pre-pandemic levels (Currie et al., 2021; Ilham et al., 2024). Firms are increasingly calling employees back to the office. Yet, the path dependencies and habits developed during the pandemic, such as teleworking, online shopping, and virtual social activities, have seemed to have altered behavioural preferences and spatial choices (Batty, 2022; Downey et al., 2022; Vickerman, 2021; Victoriano-Habit and El-Geneidy, 2024).

A remarkable phenomenon observed during the pandemic was the dispersion trend in housing (Khan and Morency, 2024; Loo and Huang, 2022; Moser et al., 2022). In the absence of daily commuting, many households chose to relocate farther from their workplaces. Offices and retail spaces in central business districts became vacant, which raised concern among urban researchers that metropolitan cores might lose their traditional role as hubs of production and commerce (Li and Stoler, 2023; Mu et al., 2023). This was reflected in the steep decline of both residential and commercial rental prices in the city centre (Cortellino, 2021). At the same time, a counter force of re-concentration emerged. As downtown rents dropped and employers reinstated in-person work requirements, some suburban households began moving (back) to more central areas. This dynamic raises an important question: was the dispersion a temporary shock, or will the re-concentration be strong enough to achieve a "net-zero" balance of migration in the short, medium, and long term?

This study investigates changes in housing relocation behaviour before, during, and after the COVID-19 pandemic. It aims to quantify how pandemic-related behavioural shifts altered relocation preferences and to assess whether these changes signify temporary adaptations or lasting transformations in urban form.

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2. Literature review

2.1. Foundations of housing relocation behaviour

Housing relocation studies have established a consistent set of determinants which shape residential mobility. Life-course events represent the most persistent drivers across the literature, since marriage, divorce, childbirth, household formation and dissolution, job changes, and retirement alter space needs, access requirements, and daily routines, which create conditions for relocation (Clark, 2012; Kulu and Milewski, 2007; Mulder and Hooimeijer, 1999). Housing and neighbourhood dissatisfaction forms a second major cluster of factors which influence relocation intention and action. Inadequate dwelling size, outdated physical conditions, overcrowding, and undesirable neighbourhood characteristics increase the propensity to consider moving (De Groot et al., 2011; Eluru et al., 2009; Fang, 2006; Nowok et al., 2018). Accessibility to work and amenities, proximity to services, and neighbourhood social conditions also shape preferences, which supports the view that relocation involves both lifestyle adaptation and spatial adjustment (Fatmi et al., 2017; Fatmi and Habib, 2018; Kim et al., 2005). A further set of determinants relates to habit persistence and previous behaviour, since households tend to maintain similar travel and residential patterns across moves, which introduces path dependence that influences choice of destination (Eluru et al., 2009; Fatmi and Habib, 2018). Evidence from both a pre-pandemic and early pandemic panel data also indicates that commute burden, neighbourhood density, and dwelling size remain central in shaping location preferences, which suggests considerable continuity in structural determinants even as external shocks emerge (Saini and Pandit, 2025; Wang et al., 2025).

Financial and structural constraints also affect whether relocation occurs and the types of alternatives available. Evidence from European and North American contexts shows that limited affordability suppresses mobility for low-income households, which remain in rental dwellings despite excessive rent burdens or insufficient space (Ioannides and Zabel, 2008; Winke, 2021). In tight housing markets, households face constrained choice sets, which increases the likelihood of staying put even where dissatisfaction or life-course pressures exist. Risk attitudes and perceived economic uncertainty further influence both the timing and probability of moving, since households with higher risk aversion favour residential stability, even when facing mismatches between current dwellings and desired housing attributes (De Groot et al., 2011; Rashidi and Ghasri, 2019). Together, these structural and behavioural elements define the pre-pandemic baseline against which later shifts during and after COVID-19 can be interpreted.

2.2. Pandemic-induced shifts in activity and travel patterns

The pandemic shock introduced research efforts into how urban activity patterns have changed. The review by Ilham et al. (2024) found that the pandemic brought permanent job changes and evolving work and non-work activities. A common finding across multiple studies is the substitution of physical trips with digital engagement, particularly remote work and online shopping, which have collectively reduced overall travel demand (Batty, 2022; Hensher et al., 2022; Hensher et al., 2023; Hossain et al., 2024; Victoriano-Habit and El-Geneidy, 2024). The number of commuting days has remained lower than pre-pandemic levels due to the continued appeal of remote work and time savings (Kroesen et al., 2023; Patwary and Khattak, 2024). These changes prompted a modal redistribution of trips: work trips decreased while non-work travel, particularly leisure and weekend trips, increased (Borowska-Stefańska et al., 2022; Ma et al., 2023). Although overall travel activity has partially rebounded, it remains below pre-pandemic levels, which suggests that the COVID-19 pandemic has led to some enduring shifts in mobility habits (Beck and Hensher, 2020; Ceccato et al., 2022; Christidis et al., 2022).

Travel modes have shifted due to evolving perceptions of safety, convenience, and accessibility. Public transport experienced the sharpest and most persistent modal decline, which in turn led to reduced service levels and a feedback loop of further demand loss (Christidis et al., 2022; DeWeese et al., 2020; El Zein et al., 2022; Redelmeier and El-Geneidy, 2024). Private car use, in contrast, recovered rapidly and even surpassed pre-pandemic levels in many regions (Beck and Hensher, 2022; Ma et al., 2023; Mogaji, 2022; Negm and El-Geneidy, 2024). In the meantime, active transport increased as walking and cycling became viable substitutes for short distance or non-work trips, particularly among remote workers (Brezina et al., 2021; Kroesen et al., 2023; Victoriano-Habit and El-Geneidy, 2024).

2.3. Changes in residential relocation trends

The post-pandemic activity pattern shifts have redefined the determinants of residential location choice. The widespread adoption of remote work has reduced the necessity of living close to workplaces, which enables greater spatial flexibility. This shift acts as a mechanism to reduce the dragging force of the daily commute, allowing individuals, particularly those with longer travel times, to seek residential environments that better align with their lifestyle preferences (de Abreu e Silva, 2022). Several studies (Mu et al., 2023; Stefaniec et al., 2022) report the trend of households relocating from dense urban centres toward suburban and rural areas, where larger, more affordable homes and access to greenery are available. In high-tech hubs like the San Francisco Bay Area, the remote-eligible workforce has shown a significant propensity for relocation, which reflects that the tech sector may serve as a leading indicator for broader long-term shifts in aggregate travel and settlement patterns (Tan et al., 2023).

The increased time spent at home has further intensified the demand for dwellings with more indoor and outdoor space, which made dwelling attribute priorities higher than proximity in relocation decisions (Eliasson, 2025; Huang et al., 2023; Song et al., 2023; Versigghel et al., 2026). Evidence from the Swiss context suggests a decoupling of work and home locations, where telework enables “residential (im)mobility” by allowing people to remain in preferred areas or move further away without changing jobs (Macias et al., 2025). Furthermore, recent research suggests that the telework-commute distance decision is often a package choice, and that approximately 20% of the population are movers whose specific telework arrangements directly precipitate their relocation to more distant residential areas (Asmussen et al., 2024). As such, residential choice becomes increasingly shaped by lifestyle preferences rather than commuting convenience, which could induce a structural shift in the urban spatial landscape. Long-term scenarios for mega-regions, such as the Greater Golden Horseshoe in Canada, indicate that these prospective changes in work geography will likely result in a more dispersed population, which increases the importance of re-evaluating the regional transportation planning and infrastructure investment (Sweet and Scott, 2024).

3. Data

This study is conducted in the Greater Montréal Region, the second largest urban population in Canada with more than 4.38 million inhabitants. For this study we divided the region into seven zones for analytical purposes (Fig. 1) based on combining census tracts and administrative boundaries to form distinct spatial areas. The Urban Core refers to the densely built central area with a high concentration of employment. Montréal West is a primarily residential area composed largely of single-family homes and characterised by middle- to upper-middle-income households. In contrast, Montréal East has a more working-class profile with moderate income levels, lower housing prices compared with central and western neighbourhoods, and a historic concentration of industrial land. Laval is socioeconomically diverse, with a mix of working-class districts and several highly affluent neighbourhoods. Longueuil, as the core of the South Shore, has income levels

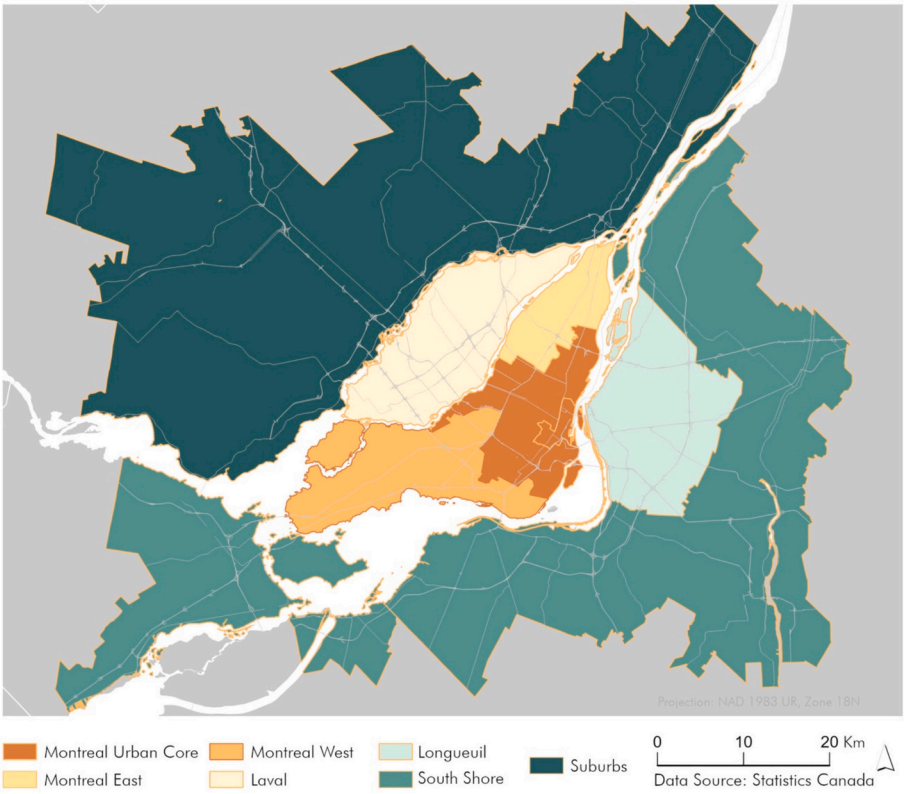

Fig. 1. Empirical study area – the Greater Montréal Region macrozones.

close to regional averages, while the rest of the South Shore includes several more affluent suburban municipalities. The North Shore and Southwest Shore, grouped as the Suburbs Zone, consist largely of more affordable, middle-income commuter communities. The study analyzes whether the relocation preferences for each of the zones are consistent across different pandemic phases.

The study period spans three distinct phases of telework policy and adoption in Québec. Prior to the pandemic, telework had relatively low adoption rates. The onset of COVID-19 in March 2020 forced a rapid transition, with Montréal reaching telework rates of approximately 45% during the height of the crisis (Institut de la statistique du Québec, 2022). More recently, the region has transitioned toward a common hybrid work model, as in the 2024–2025 hybrid work guidelines a minimum of three days per week in the office for many public and private sector employees (Government of Canada, 2024). These regulatory shifts are essential for contextualizing the relocation preferences observed in our sample.

The analysis draws from wave 4 of the Montréal Mobility Survey (MMS), an ongoing longitudinal household mobility survey developed and administered by the Transportation Research at McGill (TRAM) group since 2019. The MMS provides detailed data on household moving records, including previous and current home and workplace locations, reasons for moving, socio-demographic characteristics, and mobility features. The research team employed multiple recruitment strategies to ensure a diverse sample as proposed by Dillman et al. (2014). The original survey data was cleaned and validated based on multi-criterion and the wave 4 data in 2023 have 5312 valid responses. To examine the housing relocation behaviour changes across the different pandemic phases, this study categorizes the relocation records into three periods: the Pre period (2014–2019), the During period (2020−2021), and the Post period (2022−2023). Supplementary socioeconomic and spatial indicators were retrieved from Statistics Canada and processed within McGill University's TRAM Lab, including accessibility indices, distance measurement and dwelling characteristics. Variables are selected based on extensive literature review on modelling housing relocation choice. The variable definition, summary statistics and data sources are presented in Table 1.

4. Methods

Housing relocation studies mostly apply discrete choice, hazard model, and joint modelling approaches which capture different dimensions of mobility behaviour. Multinomial logit, nested logit, and mixed logit models represent the dominant frameworks for estimating residential location choice. These models incorporate attributes of dwellings, neighbourhoods, accessibility, housing costs, and household characteristics in the evaluation of alternatives (Eluru et al., 2009; Fatmi et al., 2017; Kim et al., 2005). Duration and hazard based models examine the length of residence and the factors which influence the timing of moves, which could be used to model residential stability and the accumulation of pressures which eventually lead to relocation (Eluru et al., 2009; Thomas et al., 2016). Other studies integrate multiple components of the mobility process, such as linking reasons for relocating with move timing or incorporating risk attitudes into mobility decisions, which reflects the multi-stage nature of residential adjustment (Rashidi and Ghasri, 2019). Across these methodologies, the studies in the literature consistently incorporates life-course indicators, accessibility variables, housing costs, neighbourhood conditions, and market constraints, which together form the theoretical and empirical basis for modelling relocation behaviour in the context of pandemic-related behavioural shifts.

The analytical framework in this study is based on a multinomial logit (MNL) model of housing relocation choice, as in Eq. (1) and (2). The model examines whether the key determinants of relocation, such as accessibility, distance to workplace, and housing cost, maintained consistent influence across three phases: pre-pandemic (before February 2020), during the pandemic Between February 2020 and 2022), and post-pandemic (after February 2022). The estimated models allow

Table 1
Data summary statistics and description.

Variable	Definition	mean	std	median	Source
Dependent variable					
Spatial relocation choice	The chosen macrozone among the 7 alternative zones in the choice set	–	–	–	
Explanatory variables in the system utility functions					
Generic variables					
Household size	Reported number of household members	2.3	1.21	2	Montreal Mobility Survey (MMS) Wave 4 in 2023
Income (C$)	Categorical variable of low-, mid- and high-income, defined as annual household income below 60 k, 60 k–120 k, and over 120 k, respectively				
Transit identity	Dummy variable, self-reported identity as a transit user				
Car ownership	Household accessible number of cars				
Preference on large home	Dummy variable, self-reported rank of whether having a larger home was important when moving				
Alternative specific variables					
Job accessibility	Number of jobs accessible within 30 min of driving	138,457.15	143,459.34	74,630	TRAM lab
Distance to work location (km)	Distance from home location to the reported work location before and after moving	10.62	62.86	5.59	TRAM team computation using ArcGIS
Dwelling value (C$)	Average dwelling value at Dissemination area (DA) level	602,085.93	235,174.30	570,000	2021 Census of Population in Canada
Weight	Population synthesis using iterative proportional fitting	–	–	–	

Ethics certification was approved in September 2019 (REB File 99–0719).

comparisons across phases to test whether behavioural parameters change back to pre-pandemic level, or the pandemic influences persistent in the longer run. The model also examines how relocation behaviours differ on individual level characteristics, such as household size, car ownership, transport habits and income level.

$$P_{ni} = \frac{e^{V_{ni}}}{\sum_{j}^{C} e^{V_{nj}}} \quad (1)$$

where,

$$V_{ni} = ASC_i + \beta_n X_i {}^{*} t_{ni} + \beta'_i X_n \quad (2)$$

P_{ni}: probability of individual n to choose alternative location i.

V_{ni}: system utility of individual n to choose alternative location i

ASC_{ni}: alternative specific constant of choosing location i

X_i: vector of variables denoting the feature of the alternative location i relative to the previous home of individual n, such as relative distance to work

X_n: vector of the generic variables denoting the characteristics of the individual n, which do not change across alternatives locations

β_n: vector of behavioural coefficients pre-, during or post-COVID19

β'_i: vector of the alternative specific coefficients (coefficients of main factors separated for pre-, during or post-COVID19)

t_{ni}: a dummy variable denoting the relocation time as pre-, during or post-COVID19

As denoted in Eq. (1), the probability that individual n selects spatial macrozone i is based on the utility associated with relocating to i, conditional on the features of individual n's previous home location. In other words, the **relative utility** of moving from the previous home to location i determines the probability of choosing zone i. Accordingly, alternative specific variables, such as distance to work and job accessibility, are expressed as **relative measures**, computed by subtracting the value at the previous home from the value of each alternative.

The utility function in Eq. (2) therefore measures the "extra" utility gained from relocating to alternative i, given the characteristics of the decision-making unit (individual n), the attributes of the previous home, and the attributes of alternative i. This formulation establishes the key distinction between a relocation model and a conventional location choice model. The dummy variable t serves as a temporal indicator (during, after), which allows the identification of whether behavioural parameters during and after the pandemic differ from the pre-pandemic baseline.

The MMS dataset contains both home and work locations before and after moving across the three pandemic phases, which enables the estimation of relocation preferences and their temporal variation.

5. Results

5.1. Descriptive analysis

During and after the COVID-19 pandemic, an obvious decentralization pattern emerged, with more households relocating toward the outer boundaries of the Greater Montréal Region (Fig. 2). The profile of movers has shifted across the three pandemic phases (Fig. 3). Before the pandemic, movers were spatially scattered but still concentrated in the Urban Core. During the pandemic, residents of the Urban Core became the primary group of movers suggesting an active outflow from the central area., In the post-pandemic period, movers became more dispersed across the region compared with both the pre-pandemic and pandemic phases. A comparison of previous and current home locations also shows a general movement from central neighbourhoods toward suburban or urban periphery areas. This outward shift reflects a broader decentralization of residential preferences during and following the pandemic.

The density distribution of distance to work and distance to city centre, before and after moving across three pandemic phases are plotted in Fig. 3. Pre-pandemic, relocating households moved an average of 1.4 km farther from their workplace. This distance increased during the pandemic to approximately 2 km, and in the post-pandemic period, the average distance to work increased from 10.8 km to 17 km.

The pattern for distance to the city centre differs slightly. The average increase shifted from 1.5 km pre-pandemic to 2.1 km during the pandemic, and then to 1.6 km post-pandemic. A general outward shift, away from both workplaces and the city centre, is evident, particularly during and after the pandemic. These descriptive results suggest that proximity and accessibility temporarily diminished in importance in household relocation decisions during and after the pandemic.

5.2. Modelling results

The estimated MNL model achieves an adjusted rho-square of 0.463 (Table 2) which reflects a strong model fit for a spatial choice framework and confirms that the included variables capture substantial variation in relocation behaviour across the three pandemic periods. There is evidence of a decentralization tendency in relocation, as households became more likely to relocate outside the downtown core; however, accessibility and proximity to employment remains favoured factors across the pandemic phases.

5.2.1. Pandemic-related decentralization and the role of accessibility

Before the pandemic, relocation utility increased with job accessibility and decreased with distance to work. The baseline coefficient for

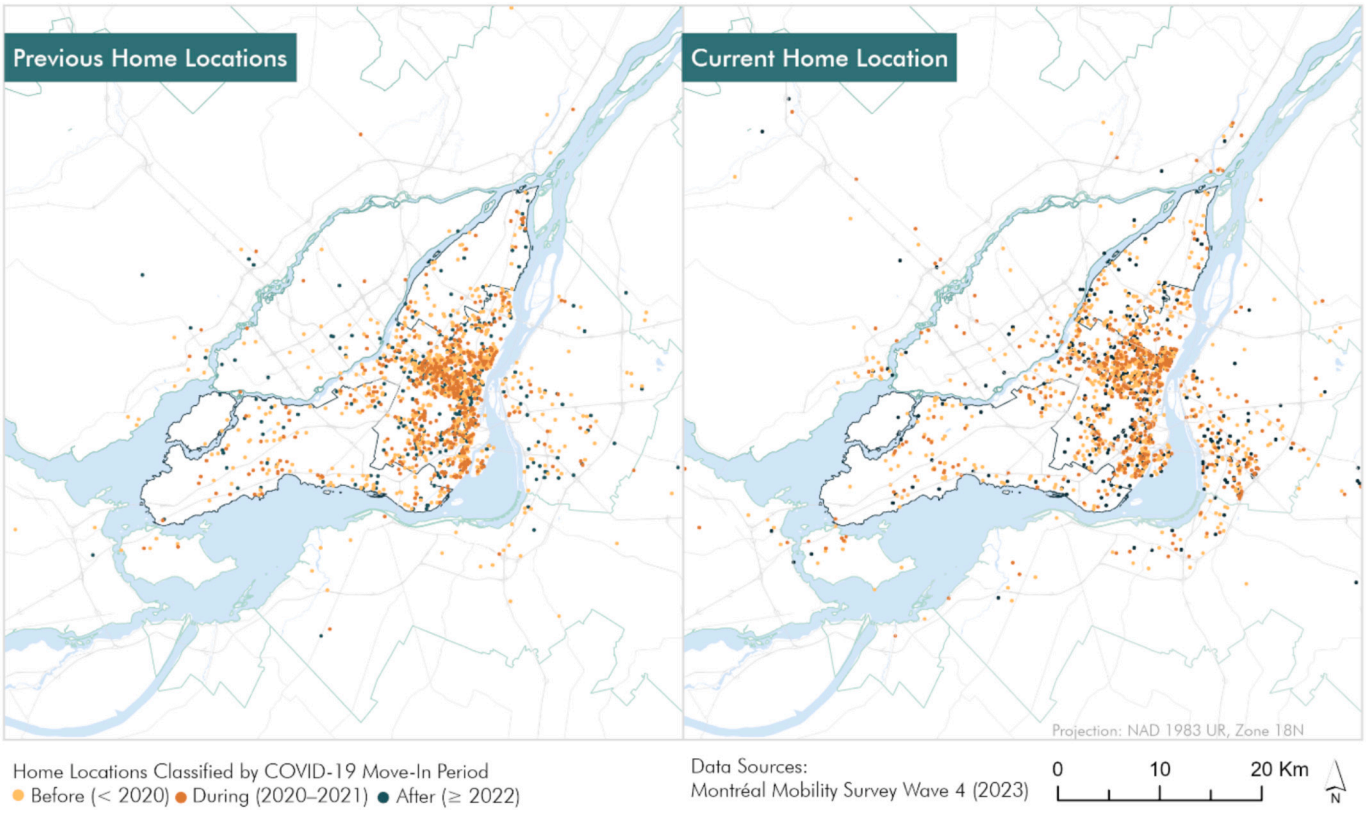

Fig. 2. Home relocation distribution pre-, during and post- COVID19 from the MMS data.

job accessibility is positive (0.19) and statistically significant, suggesting that households systematically favoured locations with better access to employment opportunities, prior pandemic. During and after pandemic deviations for job accessibility are small and not statistically significant, implying that the valuation of job accessibility remains positive throughout the pandemic and post-pandemic periods. Although there was a tendency over weaker influence of job accessibility during the pandemic, these differences are not statistically distinguishable from the pre-pandemic level.

Distance to work shows a stronger pandemic related adjustment. Prior to the pandemic, distance to workplace reduces relocation utility (−0.07), which shows the importance of proximity in residential choice. The deviation during the pandemic is small and not statistically significant (−0.01), which implies distance still negatively influence relocation utility. After the pandemic, however, the deviation becomes positive and statistically significant (0.03), suggesting a relaxing of the distance penalty. Overall, households remain sensitive to workplace distance, but the constraint significantly weakens after the pandemic, which indicates an increased tolerance for residential-workplace separation.

Put another way, decentralization does not appear to be driven by a rejection of accessibility itself, but rather by a partial relaxation of proximity constraints. Job accessibility continues to contribute positively to relocation utility, while distance to work becomes seemingly less constraining in the post-pandemic period.

5.2.2. *Housing market preferences*

Housing market characteristics show a stable influence on relocation decisions. Before the pandemic, higher dwelling value was associated with greater relocation utility (0.13), reflecting preferences for neighbourhoods that offer higher quality housing and amenities. The pandemic period deviations for dwelling value are not statistically significant, indicating that this preference persisted during and after the pandemic. The implied coefficients remain positive throughout (β_during $\approx$ 0.09; β_after $\approx$ 0.19), which suggests continuity rather than structural change in the valuation of neighbourhood quality.

Preferences for larger homes showed strong spatial difference across the pandemic phases. Before the pandemic, the coefficient for large-home preference is positive and statistically significant in several mid-town and suburban macrozones, including Montréal East (0.92) and Laval (1.22) and Southshore (1.20), indicating that households seeking larger dwellings are more likely to relocate to these areas. During the pandemic, the coefficients for larger homes are not statistically significant. After the pandemic, the preference for larger homes in suburban locations are generally stronger than before, with positive and significant effects observed for Laval (2.14), which signals higher demand for lower density, space rich environments.

Household size has smaller and less consistent effects. While some suburban areas exhibit weak positive associations with household size, the coefficients are generally modest and often not statistically significant, indicating that household size alone does not drive relocation once housing form and neighbourhood attributes are considered.

5.2.3. *Influence of travel habits*

Travel habits strongly mediate decentralization patterns. Car ownership consistently associates with higher relocation utility for mid-town and suburban macrozones relative to Montréal downtown. The estimated coefficients range from 0.92 to 1.55 and are all significant across non-central locations. These magnitudes imply that automobile access significantly lowers the perceived cost of distance and enables households to consider locations beyond the core.

In contrast, transit users exhibit a systematic preference for central areas. The coefficients associated with transit use are negative and statistically significant across suburban macrozones, ranging from −0.40 to −1.22. This pattern reflects the concentration of high quality transit services within central Montréal and confirms that reliance on transit constrains residential decentralization.

Together, these results indicate that travel habits act as a key sorting

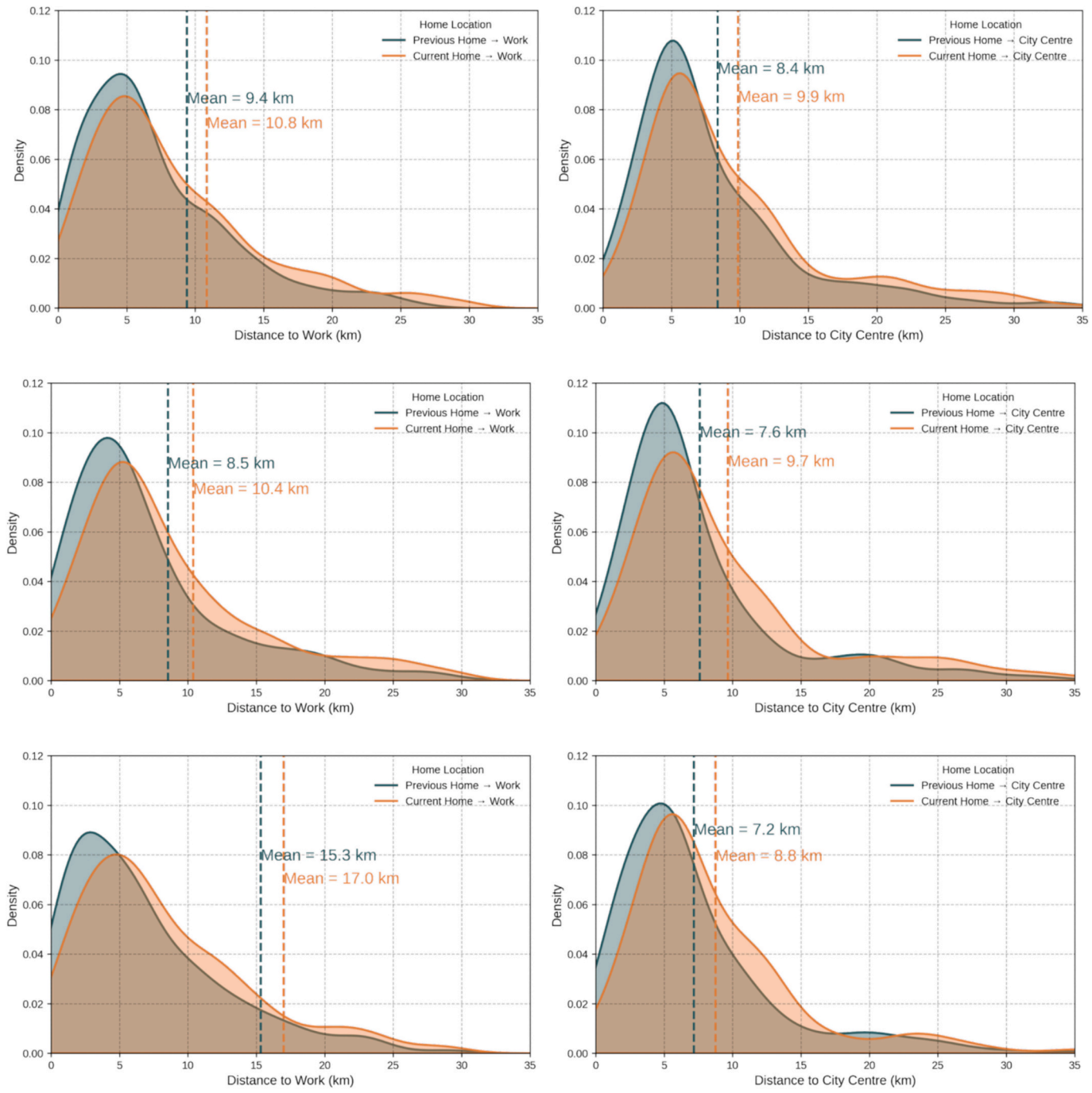

Fig. 3. Spatial shift of relocation: distance from city centre and distance from work (top to bottom: pre-, during and post- pandemic).

mechanism: households with greater mobility flexibility decentralize more readily, while those dependent on transit remain anchored to the central city.

5.2.4. Low-income households

The relocation behaviour of low-income households exhibits marked variation across periods and locations. Before the pandemic, lower-income households were more likely to remain in or near the central area, while suburban and off-island locations were generally less attractive, with significant negative influence on relocation utility in the Southshore (−7.00) and Suburbs (−6.43). During the pandemic, this pattern partially shifts, as several suburban areas north and southwest of the Island temporarily became more attractive to low-income movers. This change likely reflects short-term adjustments in housing affordability and rental availability during a period of market disruption.

After the pandemic, these suburban locations became significantly less attractive to low-income households than before, suggesting that the pandemic-induced decentralization of lower-income households is not sustained. Instead, the results indicate a reassertion of financial and structural barriers to suburban access, which reinforces longer-term socio-spatial exclusion, with low-income households being confined by price.

6. Discussion

There was observable pandemic-related decentralization in residential location during the COVID-19 pandemic in the Montreal

Table 2
Housing relocation MNL modelling results.

Variable			Value	sig.		
Accessibility						
Job accessibility - before			**0.19**	**		
Job accessibility - during			−0.04			
Job accessibility - after			0.06			
Distance to work - before			**−0.07**	***		
Distance to work - during			−0.01			
Distance to work - after			**0.03**	**		
Housing market						
Dwelling value - before			**0.13**	**		
Dwelling value - during			−0.04			
Dwelling value- after			0.06			
Ref: Montreal Downtown	Montreal East		Montreal West		Laval	
(ASC)	**−2.30**	***	**−2.30**	***	**−3.76**	***
Household size	0.05		0.07		−0.01	
Car ownership	**0.92**	***	**1.19**	***	**1.23**	***
Transit user	**−0.86**	***	**−0.72**	***	**−1.22**	***
Low income - before	1.03		0.81		1.02	
Low income - during	**−7.97**	***	0.19		**−7.81**	***
Low income - after	−1.21		−0.62		**−7.47**	***
Large home preference - before	**0.92**	***	**−0.69**	**	**1.22**	***
Large home preference - during	−0.83		−0.10		0.80	
Large home preference - after	0.37		0.61		**0.92**	*
Ref: Montreal Downtown	Longueuil		South Shore		Suburb	
(ASC)	**−1.09**	***	**−3.19**	**	**−2.19**	**
Household size	**−0.16**	*	0.22		0.09	
Car ownership	**1.08**	***	**1.32**	***	**1.55**	***
Transit user	**−0.40**	*	**−1.21**	***	**−1.09**	***
Low income - before	−0.93		**−7.00**	***	**−6.43**	***
Low income - during	0.70		**−1.77**	**	**7.53**	***
Low income - after	0.82		**−1.68**	**	**−1.62**	**
Large home preference - before	0.08		**1.20**	***	0.70	
Large home preference - during	0.38		0.72		−0.40	
Large home preference - after	0.25		0.46		−0.08	
Observations			1050			
Init log likelihood			−2217.975			
Final log likelihood			−1122.727			
Rho-square (initial)			**0.494**			
Rho-square (k)			**0.463**			
Akaike Information Criterion			2383.454			
Bayesian Information Criterion			2725.456			
Final gradient norm			0.006			

metropolitan area. This occurred alongside notable continuity in the value of accessibility and housing quality. The findings align with the broader housing relocation literature which emphasizes that relocation decisions are shaped by a stable set of structural determinants, even in the presence of major external shocks (Clark, 2012; Mulder and Hooimeijer, 1999; Saini and Pandit, 2025; Wang et al., 2025). Rather than a fundamental shift away from accessibility, the observed decentralization appears to reflect a relaxation of proximity constraints, particularly with respect to distance to work, which is consistent with recent evidence on post-pandemic behavioural adaptation (Mu et al., 2023; Orvin, 2023; Stefaniec et al., 2022).

Job accessibility still strongly impact the relocation preference, consistent with long-standing findings that access to employment opportunities and commute burden remain central components of residential choice (Fatmi et al., 2017; Kim et al., 2005). During the pandemic, the absence of statistically significant deviations in the valuation of job accessibility suggests that accessibility did not lose relevance, despite widespread changes in work arrangements. This finding aligns with emerging panel-based studies which report continuity in accessibility preferences even as commuting frequency declines (Saini and Pandit, 2025; Wang et al., 2025). The post-pandemic weakening of the distance to work penalty, however, indicates an increased tolerance for spatial separation between home and workplace, which is consistent with findings on remote and hybrid work reducing the necessity of daily proximity (Hensher et al., 2022; Kroesen et al., 2023; Patwary and Khattak, 2024). Together, these results refine the decentralization narrative as it is distinguished between accessibility as a structural preference and proximity as a constraint that can be relaxed under changing activity patterns.

The persistence of positive preferences for higher dwelling value across all periods further supports the view that the pandemic did not fundamentally alter the importance of neighbourhood quality and housing amenities in relocation decisions. While absolute values could rise due to regional inflation, the observed shifts reflect the behavioural choice to move toward different tiers of the housing market. Though the empirical results in Montréal did not show a “more important” attachment to housing quality and size post-pandemic, as found in other studies (Eliasson, 2025; Song et al., 2023), the continuity in positive preference is consistent with earlier studies which identify housing dissatisfaction, physical conditions, and neighbourhood characteristics as stable drivers of residential mobility (De Groot et al., 2011; Fang, 2006). Importantly, the absence of a strong and consistent effect of household size suggests that space preferences are not driven solely by demographic expansion, but rather by changing lifestyle expectations and activity patterns.

Travel habits plays a key role in the post-pandemic housing relocation behaviour patterns in the decentralization process. The strong and robust association between car ownership and relocation to mid-town and suburban locations aligns with pre-pandemic evidence that mobility resources shape feasible choice sets and enable households to maintain established travel patterns across moves (Eluru et al., 2009; Fatmi and Habib, 2018). In contrast, the negative association between transit use and suburban relocation reflects the spatial concentration of high quality transit services within central areas, which constrains decentralization for transit-dependent households. This pattern echoes with pandemic era travel study findings of persistent declines in public transport use and uneven recovery across modes (Christidis et al., 2022; Redelmeier and El-Geneidy, 2024). These findings suggest that decentralization is not uniformly accessible, but instead conditioned on access to private mobility.

The brief increase in suburban attractiveness for low-income movers during the pandemic aligns with studies on short-term market disruptions, rental availability shifts, and reduced competition in certain areas during periods of economic uncertainty (De Groot et al., 2011; Rashidi and Ghasri, 2019). However, the post-pandemic negative preference for suburban and off-island locations indicates that structural affordability constraints remain dominant. This finding is consistent with studies showing that limited financial resources suppress mobility and constrain residential options for lower-income households, particularly in tight housing markets (Ioannides and Zabel, 2008; Winke, 2021).

The findings demonstrate that pandemic-related residential relocation patterns are best understood as an interaction between stable structural preferences and flexible constraints. Accessibility, housing quality, and mobility resources continue to shape relocation behaviour, while the pandemic primarily altered the tolerance for distance and the feasibility of certain spatial choices. This supports recent calls to move beyond binary narratives of urban decline or suburban resurgence and instead focus on how behavioural adaptation interacts with enduring market and infrastructure conditions (Batty, 2023; Florida et al., 2023).

7. Conclusion

This study examined residential relocation behaviour before, during, and after the COVID-19 pandemic in Montreal, Canada. There was an obvious decentralization of relocation patterns but we note that that accessibility remained a persistent anchor in residential choice even during the pandemic. Job accessibility continued to be positively valued across all periods, whereas the distance to work penalty weakened after

the pandemic. This points to a relaxation of proximity constraints rather than a structural shift away from accessibility. Housing market preferences remain largely stable, with neighbourhood quality consistently shaping relocation utility and post-pandemic adjustments concentrated in stronger suburban demand for larger dwellings. Travel habits condition the extent of decentralization, as automobile access expands feasible choice sets while transit reliance anchors households to central locations. For low-income households, we found decentralization effects to be temporary, with post-pandemic outcomes reinforcing long-standing affordability constraints. Overall, the findings suggest that pandemic related relocation reflects behavioural adjustment within enduring structural constraints, rather than a fundamental reconfiguration of urban residential systems.

Several limitations should be acknowledged when interpreting these findings. First, the survey may underrepresent very high-income households, whose residential mobility behaviour could differ substantially from that of high-, middle-, and low-income groups. In particular, a housing filtering process may be at play, where very high-income households relocate first, followed by subsequent moves among high- and middle-income households into vacated dwellings. Such cascading relocation dynamics could amplify decentralization patterns and shape urban form in ways that are not fully captured in the present analysis. Second, the temporal scope of the data limits the ability to assess longer-run behavioural change. The survey was conducted in 2023, which captures only the initial post-pandemic adjustment period. Longer-term effects, such as relocation patterns a decade after the pandemic, may differ substantially as housing markets, work arrangements, and travel behaviour continue to evolve. In particular, it remains unclear whether recentralization forces will be sufficient to reverse the pandemic-induced relaxation of distance penalties and support sustained recovery of central areas. Our study concentrated on the commute travel distance as other distances were not collected in the survey, future research can investigate the effects of relocation on non-commute travel and the associated environmental impacts.

Despite these limitations, we gain insight here in how short-term shocks interact with structural determinants of residential choice. From a planning perspective, the results indicate that policies should not assume a permanent erosion of accessibility preferences, but instead account for the uneven ability of households to adapt to increased spatial flexibility. Understanding the persistence of residential dispersion and the pace of potential reconcentration can inform housing supply strategies, public transit planning, and infrastructure investment, particularly in regions that experienced substantial suburban expansion and may require reconsideration of long-term transport and service provision for lower density areas. The evidence further suggests that the pandemic has accelerated a transition toward a more decentralized urban form rather than initiating a fundamentally new trajectory. For some households, remote and hybrid work arrangements have durably loosened the coupling between residence and workplace, which may weaken, but does not eliminate, the spatial logic of traditional central place systems. The empirical evidence from the Montréal region indicates that the urban system is likely to stabilize into a new equilibrium that adapts to digital flexibility while reaffirming the importance of accessibility and placing greater emphasis on liveability, housing quality, and neighbourhood conditions. Continued monitoring of residential mobility over longer time horizons will be essential for assessing whether pandemic-related decentralization represents a temporary disruption or a lasting transformation of urban spatial structure.

CRediT authorship contribution statement

Yu (Billie) Zhang: Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Formal analysis, Conceptualization. **Nancy A. Ross:** Writing – review & editing, Validation, Supervision, Investigation, Funding acquisition, Data curation, Conceptualization. **Ahmed El-Geneidy:** Writing – review & editing, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

None.

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Data availability

The data that has been used is confidential.

References

Asmussen, K.E., Mondal, A., Bhat, C.R., 2024. The interplay between teleworking choice and commute distance. Transp. Res. Part C Emerg. Technol. 165, 104690.
Batty, M., 2022. The post-pandemic city: speculation through simulation. Cities 124, 103594.
Batty, M., 2023. The post-pandemic world: are big cities hollowing out? Environ. Plan. B: Urban Anal. City Sci. 50 (6), 1409–1412.
Beck, M.J., Hensher, D.A., 2020. Insights into the impact of COVID-19 on household travel and activities in Australia–the early days under restrictions. Transp. Policy 96, 76–93.
Beck, M.J., Hensher, D.A., 2022. Australia 6 months after COVID-19 restrictions part 2: the impact of working from home. Transp. Policy 128, 274–285.
Borowska-Stefańska, M., Kowalski, M., Kurzyk, P., Sahebgharani, A., Wiśniewski, S., 2022. Spatiotemporal changeability of the load of the urban road transport system under permanent and short-term legal and administrative retail restrictions. Sustainability 14 (9), 5137.
Brezina, T., Tiran, J., Ogrin, M., Laa, B., 2021. COVID-19 impact on daily mobility in Slovenia. Acta Geogr. Slov. 61 (2), 91–107.
Ceccato, R., Baldassa, A., Rossi, R., Gastaldi, M., 2022. Potential long-term effects of Covid-19 on telecommuting and environment: an Italian case-study. Transp. Res. Part D: Transp. Environ. 109, 103401.
Christidis, P., Cawood, E.N., Fiorello, D., 2022. Challenges for urban transport policy after the Covid-19 pandemic: Main findings from a survey in 20 European cities. Transp. Policy 129, 105–116.
Clark, W.A.V., 2012. Residential Mobility and the Housing Market. The SAGE Handbook of Housing Studies, pp. 66–83.
Cortellino, F., 2021. Housing Market Impact of Pandemic in Greater Montreal. Canada. https://coilink.org/20.500.12592/75s5qs7.
Currie, G., Jain, T., Aston, L., 2021. Evidence of a post-COVID change in travel behaviour–self-reported expectations of commuting in Melbourne. Transp. Res. A Policy Pract. 153, 218–234.
de Abreu e Silva, J., 2022. Residential preferences, telework perceptions, and the intention to telework: insights from the Lisbon metropolitan area during the COVID-19 pandemic. Reg. Sci. Policy Pract. 14, 142–161.
De Groot, C., Mulder, C.H., Manting, D., 2011. Intentions to move and actual moving behaviour in the Netherlands. Hous. Stud. 26 (03), 307–328.
DeWeese, J., Hawa, L., Demyk, H., Davey, Z., Belikow, A., El-Geneidy, A., 2020. A Tale of 40 Cities: A Preliminary Analysis of Equity Impacts of COVID-19 Service Adjustments across North America. Findings.
Dillman, D.A., Smyth, J.D., Christian, L.M., 2014. Internet, phone, mail, and mixed-mode surveys: the tailored design method. Indianapolis, Indiana, p. 17.
Downey, L., Fonzone, A., Fountas, G., Semple, T., 2022. The impact of COVID-19 on future public transport use in Scotland. Transp. Res. A Policy Pract. 163, 338–352.
El Zein, A., Beziat, A., Pochet, P., Klein, O., Vincent, S., 2022. What drives the changes in public transport use in the context of the COVID-19 pandemic? Highlights from Lyon metropolitan area. Reg. Sci. Policy Pract. 14, 122–141.
Eliasson, K., 2025. Work from home and big city out-migration before and after the pandemic. Eur. Urban Reg. Stud. 32 (4), 457–473.
Eluru, N., Sener, I.N., Bhat, C.R., Pendyala, R.M., Axhausen, K.W., 2009. Understanding residential mobility: joint model of the reason for residential relocation and stay duration. Transp. Res. Rec. 2133 (1), 64–74.

Fang, Y., 2006. Residential satisfaction, moving intention and moving behaviours: a study of redeveloped neighbourhoods in inner-city Beijing. Hous. Stud. 21 (5), 671–694.
Fatmi, M.R., Habib, M.A., 2018. Microsimulation of life-stage transitions and residential location transitions within a life-oriented integrated urban modeling system. Comput. Environ. Urban. Syst. 69, 87–103.
Fatmi, M.R., Chowdhury, S., Habib, M.A., 2017. Life history-oriented residential location choice model: a stress-based two-tier panel modeling approach. Transp. Res. A Policy Pract. 104, 293–307.
Florida, R., Rodríguez-Pose, A., Storper, M., 2023. Critical commentary: cities in a post-COVID world. Urban Stud. 60 (8), 1509–1531.
Government of Canada, 2024. Common hybrid work model.
Hensher, D.A., Balbontin, C., Beck, M.J., Wei, E., 2022. The impact of working from home on modal commuting choice response during COVID-19: implications for two metropolitan areas in Australia. Transp. Res. A Policy Pract. 155, 179–201.
Hensher, D.A., Wei, E., Beck, M.J., 2023. The impact of COVID-19 and working from home on the workspace retained at the main location office space and the future use of satellite offices. Transp. Policy 130, 184–195.
Hossain, M.S., Fatmi, M.R., Thirkell, C.E., 2024. How will in-person and online grocery shopping and meal consumption activities evolve after COVID-19? Transp. Res. Rec. 2678 (12), 337–348.
Huang, Z., Loo, B.P.Y., Axhausen, K.W., 2023. Travel behaviour changes under work-from-home (WFH) arrangements during COVID-19. Travel Behav. Soc. 30, 202–211.
Ilham, M.A., Fonzone, A., Fountas, G., Mora, L., 2024. To move or not to move: a review of residential relocation trends after COVID-19. Cities 151, 105078.
Institut de la statistique du Québec, 2022. Teleworking in Québec. https://statistique.quebec.ca/en/fichier/teletravail-quebec-2022.pdf.
Ioannides, Y.M., Zabel, J.E., 2008. Interactions, neighborhood selection and housing demand. J. Urban Econ. 63 (1), 229–252.
Khan, N.A., Morency, C., 2024. Investigating anticipated changes in post-pandemic travel behavior: latent segmentation-based logit modeling approach using data from COVID-19 era. Transp. Res. Rec. 2678 (12), 381–401.
Kim, J.H., Pagliara, F., Preston, J., 2005. The intention to move and residential location choice behaviour. Urban Stud. 42 (9), 1621–1636.
Kroesen, M., De Vos, J., Le, H.T.K., Ton, D., 2023. Exploring attitude-behaviour dynamics during COVID-19: how fear of infection and working from home influence train use and the attitude toward this mode. Transp. Res. A Policy Pract. 167, 103560.
Kulu, H., Milewski, N., 2007. Family change and migration in the life course: an introduction. Demogr. Res. 17, 567–590.
Li, H., Stoler, J., 2023. COVID-19 and urban futures: impacts on business closures in Miami-Dade County. Ann. Am. Assoc. Geogr. 113 (4), 834–856.
Loo, B.P.Y., Huang, Z., 2022. Spatio-temporal variations of traffic congestion under work from home (WFH) arrangements: lessons learned from COVID-19. Cities 124, 103610.
Ma, W., Hoen, F.S., Tørset, T., 2023. No way back? A survey on changes in travel demand post-pandemic in Norway. Case Stud. Transp. Policy. 11, 100942.
Macias, L.H., Ravalet, E., Rérat, P., 2025. How does telework impact daily and residential mobilities: new geographies of working and living in Switzerland. Appl. Geogr. 178, 103591.
Mogaji, E., 2022. Wishful thinking? Addressing the long-term implications of COVID-19 for transport in Nigeria. Transp. Res. Part D: Transp. Environ. 105, 103206.
Moser, J., Wenner, F., Thierstein, A., 2022. Working from home and Covid-19: where could residents move to? Urban Plan. 7 (3), 15–34.
Mu, X., Zhang, X., Yeh, A.G.-O., Yu, Y., Wang, J., 2023. Structural changes in human mobility under the zero-COVID strategy in China. Environ. Plan. B: Urban Anal. City Sci. 50 (9), 2527–2542.
Mulder, C.H., Hooimeijer, P., 1999. Residential relocations in the life course. In: Population Issues: An Interdisciplinary Focus. Springer, pp. 159–186.
Negm, H., El-Geneidy, A., 2024. Exploring the changes in the interrelation between public transit mode share and accessibility across income groups in major Canadian cities in the post-pandemic era. J. Transp. Geogr. 115, 103792.
Nowok, B., Findlay, A., McCollum, D., 2018. Linking residential relocation desires and behaviour with life domain satisfaction. Urban Stud. 55 (4), 870–890.
Orvin, M.M., 2023. Modelling and Microsimulating Residential Relocation Decisions within an Integrated Urban Model and Testing the Housing Market for COVID-19 Pandemic.
Patwary, A.L., Khattak, A.J., 2024. Interaction between information and communication technologies and travel behavior: using behavioral data to explore correlates of the COVID-19 pandemic. Transp. Res. Rec. 2678 (12), 309–322.
Rashidi, T.H., Ghasri, M., 2019. A competing survival analysis for housing relocation behaviour and risk aversion in a resilient housing market. Environ. Plan. B: Urban Anal. City Sci. 46 (1), 122–142.
Redelmeier, P., El-Geneidy, A., 2024. If you cut it will they ride? Longitudinal examination of the elasticity of public transport ridership in the post-pandemic era. Transp. Res. Rec. 2678 (11), 241–252.
Saini, P., Pandit, D., 2025. A quantitative exploration of linkages across the decision stages of residential relocation process. Transp. Res. Procedia. 82, 604–619.
Song, Y., Lee, S., Park, A.H., Lee, C., 2023. COVID-19 impacts on non-work travel patterns: a place-based investigation using smartphone mobility data. Environ. Plan. B: Urban Anal. City Sci. 50 (3), 642–659.
Stefaniec, A., Brazil, W., Whitney, W., Caulfield, B., 2022. Desire to work from home: results of an Irish study. J. Transp. Geogr. 104, 103416.
Sweet, M., Scott, D.M., 2024. What might working from home mean for the geography of work and commuting in the greater Golden horseshoe, Canada? Urban Stud. 61 (3), 567–588.
Tan, S., Fang, K., Lester, T.W., 2023. Post-pandemic travel patterns of remote tech workers. Transp. Res. Interdiscip. Perspect. 19, 100804.
Thomas, M.J., Stillwell, J.C.H., Gould, M.I., 2016. Modelling the duration of residence and plans for future residential relocation: a multilevel analysis. Trans. Inst. Br. Geogr. 41 (3), 297–312.
Versigghel, J., Ermagun, A., Hook, H., De Vos, J., Witlox, F., 2026. The new commute: is teleworking stimulating residential and workplace relocations? J. Transp. Geogr. 130, 104471.
Vickerman, R., 2021. Will Covid-19 put the public back in public transport? A UK perspective. Transp. Policy 103, 95–102.
Victoriano-Habit, R., El-Geneidy, A., 2024. Studying the interrelationship between telecommuting during COVID-19, residential local accessibility, and active travel: a panel study in Montréal, Canada. Transportation 51 (3), 1149–1166.
Wang, Y., Hancock, T.O., Wang, Y., Choudhury, C., 2025. Modelling residential relocation behaviour combining passive revealed preference data and stated preference survey data. Transp. Policy 173, 103789.
Winke, T., 2021. Housing affordability sets us apart: the effect of rising housing prices on relocation behaviour. Urban Stud. 58 (12), 2389–2404.